MEMORANDUM

TO: Bill Maxwell, U.S. Environmental Protection Agency, OAQPS (MD-13)

FROM: Mary Lalley, ERG/RTP

DATE: March 5, 1997

SUBJECT: Final Summary of February 11, 1997 Meeting of the ICCR Process Heater Work Group

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## 1.0 PURPOSE

The purpose of the meeting was to allow meeting attendees to discuss various activities of the ICCR Process Heater Work Group. Topics of discussion included conclusions reached by the Coordinating Committee Information Collection Subgroup,progress made by the Information Collection and de Minimis Subgroups, overlap of the ICCR and other regulatory efforts, the ICCR database, and future meetings.

## 2.0 LOCATION AND DATE

The meeting was held on February 11, 1997 in Houston, Texas.

## 3.0 MEETING ATTENDEES

Meeting attendees include representatives of the OAQPS Emission Standards Division, trade associations, and state agencies. A complete list of attendees (with their affiliation) is included as attachment 1.

## 4.0 SUMMARY OF DISCUSSION

### 4.1 Information Collection

#### 4.1.1 Coordinating Committee Information Collection Subgroup Meeting

Industry representatives provided a summary of the meeting of the Subgroup on Information Collection formed by the Coordinating Committee. One industry representative explained that meeting attendees considered the information available in the ICCR database and other sources and determined that it is not necessary or feasible to send out 35,000 questionnaires as proposed in the current ICCR Information Collection Request. The industry representative provided that the subgroup decided that questionnaires are not needed for fossil fuel-fired engines, turbines, and boilers. The industry representative explained that it was agreed that the Process Heater Work Group will review the database and determine if it includes a representative sample of process heaters.

The industry representative provided that the subgroup determined that more data are required for combustion devices that fire waste. The industry representative stated that the subgroup decided that a questionnaire will be sent to facilities in the database that have indicated that they have boilers, process heaters, or incinerators that combust waste. The industry representative stated that a group comprised primarily of the Incinerator Work Group members and representatives of the Process Heater and Boiler Work Groups will meet to develop the questionnaire.

One industry representative asked what information will be requested regarding HAP emissions. An EPA representative explained that the recipients of the questionnaire will be asked

if they have any emission test data for HAPs and that the actual reports will be collected at a later date.

The work group agreed that they concur with the Information Collection Subgroup's decision to focus on waste-fired units and not on fossil fuel-fired units.

4.1.2Process Heater Work Group Information Collection Subgroup

An industry representative reported on the progress of the Process Heater Work Group Information Collection Subgroup. The industry representative stated that the group reviewed draft surveys to make sure they are consistent and meet EPA's criteria. The industry representative provided that the group determined that a combined survey could be used for some facilities while an industry-specific would be better for others and agreed to use whichever makes the most sense. The group also agreed that the draft surveys meet EPA's criteria. The industry representative stated that the group was not certain that voluntary surveys are needed because of EPA's existing database and the focus on solid waste. The group determined that the need for surveys will also depend on how direct-fired heaters will be addressed. The industry representative listed the following action items for the group:

- Review the list of process heaters to determine the types that will be covered by the ICCR
- Review the ICCR database a make a judgement regarding the quantity of data it contains
- Combine existing surveys into a single process heater survey

4.1.3 Information Collection and Gas-Fired Units

One industry representative asked if it is possible to show that information collection is not required for process heaters

fired with gas mixtures. The industry representative stated that the Coordinating Committee Information Collection Subgroup was able to determine that no additional data are required for gas turbines, internal combustion engines and fossil fuel-fired boilers and asked if a similar rationale could be used to exclude gas-fired process heaters from information collection. The industry representative stated that if the Subgroup rationale for excluding gas-fired boilers included the fact that they have been addressed through New Source Performance Standards (NSPS), a parallel rationale could be developed for process heaters. The industry representative stated that including gas-fired units in the survey would waste money and information collection efforts should be focused on combustion devices that are not gas-fired. Another industry representative suggested that a study of boilers combusting gas could be referenced to provide a rationale for excluding natural gas-fired process heaters from information collection efforts.

One industry representative suggested that the review of the database may show that adequate data are available for gas-fired units and that no further information collection is required. Another industry representative stated that the database includes gas, natural gas and process gas as fuels but does not provide unit sizes. The representative asked how emissions would be normalized. One industry representative asked if the Information Collection Subgroup normalized emissions.

An EPA representative inquired as to when industry representatives will be prepared to present data comparing emissions from produced gas to emissions from natural gas. An industry representative suggested that developing specifications for produced gas, similar to those developed for clean fuels, may

assist in gaining acceptance of the idea that produced gas is similar to natural gas.

Work Group members agreed that information collection is not required for natural gas but that this finding requires documentation.

4.2 ICCR Database Review

An industry representative explained that it was decided at the meeting of the Information Collection Subgroup formed by the Coordinating Committee that the Process Heater Work Group will review the ICCR database to determine if additional information collection is required for process heaters. An EPA representative added that the database should be reviewed considering that a questionnaire will be sent to facilities in the database that have been identified as combusting waste. An EPA representative explained that the database should be reviewed to determine if adequate information is available to develop model process heaters and facilities. The EPA representative added that models will be used to characterize emissions and fuel use, to represent industries, and to estimate the number of sources at a facility. In response to an industry representative's question regarding the number of models to be developed, the EPA representative replied that the group will determine the number of models needed. An industry representative suggested that it may be possible to represent many small sources with one model.

An industry representative suggested that each trade association review the database for the Standard Industrial Classification (SIC) that they represent. The industry representative stated that the number of process heaters in the database for a given SIC could be divided by the known number of

facilities in that SIC to determine the average number of process heaters per facility. The trade association representatives could then use this number to determine if the database provides a representative sample of process heaters. Another industry representative suggested that the firing rates of process heaters could be summed and compared to the total known usage for the entire United States to determine the percentage of process heaters that are included in the database.

One industry representative suggested that it is also important to determine the sizes of process heaters in the database in determining if it is representative of the actual population. Another industry representative stated that size information is not provided for every process heater in the database. One industry representative suggested that it may be possible to determine sizes using emission rates.

An industry representative clarified that it is not necessary to review emission data in the database and the assumption is being made that a more accurate method for estimating emissions will be developed.

Several meeting attendees agreed that the suggested database review is possible to perform for petroleum refineries but may be difficult for chemical manufacturing facilities due to their diversity. One industry representative suggested that the Chemical Manufacturers Association (CMA) representatives should, as a first step, determine which SIC they are able to represent. A representative of forest products manufacturers stated that the ICCR database can be compared to the trade association's existing database to determine how representative it is.

Some meeting attendees suggested that the database could be reviewed by looking at individual facilities that work group members are familiar with to determine if all process heaters at

the facility are included. Other meeting attendees suggested reviewing the database on a SIC level. An industry representative stated that reviewing on an SIC level will not reveal whether small but significant process heaters, such as crude oil heaters, are included in the database.
Several work group members asked what level of documentation is required to support a finding that the database is representative of an SIC.

One industry representative pointed out that a count of process heaters in the database, by source classification code (SCC), is available in a handout provided at the meeting (attachment 2) and that this count can be used in determining the number of process heaters in the database.

One industry representative clarified that the review should focus on process heaters that meet the description developed at the November 7 Process Heater Work Group meeting.
An industry representative suggested that each trade association take the following steps to review the database:

- determine the number of process heaters in the database for the SICs that they represent;
- for the represented SICs, identify process heaters that match the description developed at the November 7 meeting;
- determine the distribution of heaters by fuel type;
- determine the distribution of heaters by size; and
- determine if it is reasonable to extrapolate an industry model from the data available.

Another industry representative added that the goal is to determine the percentage of process heaters in the database and

whether the database provides a representative sample of process heaters.

One industry representative asked what the group meant by "representative." Another industry representative suggested that a representative sampling should include small, medium, and large units firing a variety of fuels.

An industry representative stated that downloading the database is a relatively lengthy process. Several work group members expressed an interest in receiving the database on compact disc. An EPA representative stated that he would look into making the database more accessible to everyone.

4.3 Work Group Responsibility Overlap

One industry representative asked if process heaters that combust industrial solid waste will be covered by the Incinerator Work Group. Another industry representative responded that they will be included in the devices considered by the Process Heater Work Group. The representative explained that combustion devices that fit the description developed at the November 7, 1996 Process Heater Work Group meeting and combust waste are process heaters. An EPA representative added that incinerators have no useful purpose other than waste disposal. One industry representative asked how medical waste incinerators that produce steam will be catagorized. Another industry representative pointed out a unit that burns scrap tires and produces steam could be either an incinerator or a boiler.

4.4 Definition of Solid Waste

An industry representative asked if the EPA has made progress in developing a definition of solid waste. The EPA representative stated that progress is being made and that one

possible decision may be to allow the ICCR Coordinating Committee to develop the definition of solid waste to be used for the ICCR. Industry representatives provided that indirect-fired process heaters combust materials other than fossil fuels such as waste water sludge, DAF, bagasse, textile waste, and peanut hulls. One industry representative added that scrap tires are combusted in incinerators and boilers. Another industry representative added that the combustion of tires addresses a disposal problem and the emissions created are comparable to those from coal. One industry representative stated that paper manufacturers who have reached the limit for the amount of recycled material in their product may pelletize excess recycled paper. The pelletized paper is then used as a fuel. Industry representatives stated that referring to such materials as "wastes" may discourage it's use. An EPA representative suggested that a recommendation could be made to the Coordinating Committee to address this issue. In response to an industry representative's question, the EPA representative explained that the solid waste issue will not be addressed at the Survey Task Group meeting in Orlando. The EPA representative added that the surveys will be sent to facilities that are identified in the ICCR database as combusting materials other than fossil fuels and once the range of materials combusted is better understood, a definition of waste can be developed. One industry representative stated that the lack of a definition for solid waste is constraining the efforts of the work groups.

4.5 Process Heaters to be Covered by the ICCR

An industry representative stated the Coordinating Committee did not make a decision regarding the Process Heater Work Group's recommendation to focus on process heaters with emissions that are due solely to the combustion of fuel. Another industry

representative provided the group is to develop, in time for the next Coordinating Committee meeting, a specific plan of how process heaters that will not be the focus of the ICCR will be addressed.

An industry representative stated that combustion devices which are or may be covered by a MACT standard could either be identified by SCC or SIC and that, while MACT standards are developed for one or more SIC, it may be necessary to review combustion devices on an SCC level. Another industry representative agreed that the ICCR is not based on SICs, as other MACT standards are. An industry representative asked how equipment that was considered under a MACT standard but for which no regulations were developed will be addressed. An EPA representative and an industry representative stated that the work group needs to develop a plan for how these combustion devices will be handled. One industry representative stated that it will be impossible to determine if a combustion device will be regulated under a MACT standard for which development has not started. An EPA representative suggested that the group determine what should be covered under another MACT standard and make sure that the people responsible for the MACT standard are aware and agree.

One industry representative stated that it will be more difficult to review the database if process heaters with process-related emissions are included.

An EPA representative provided a table of SCC descriptions of process heaters developed to show which heaters may be covered by the ICCR and which may be covered by a MACT standard outside of the ICCR. An industry representative added that he reviewed the table and identified process heaters that have process-related emissions. The table is included as attachment 2.

The EPA representative explained that the table includes the number of units in the EPA database for each SCC. The EPA representative also explained that the SCC designation was determined by whomever provided the data and may not be correct. The group reviewed the table to further identify heaters to be covered under the ICCR, heaters with process emissions, and heaters that may be covered under another MACT standard. The group recommended that the process heaters be sorted into three categories and a table be created for each. The categories include: process heaters to be focused on under the ICCR, process heaters that should be covered under a specified MACT standard, and process heaters that should be covered under a MACT standard but for which the group was not able to identify a specific standard. The three tables reflecting the recommendations of the work group are included as attachment 3. The EPA representative stated that he will circulate the table of heaters for which an appropriate MACT standard has not been identified through EPA to solicit recommendations.

During the discussion, the group identified several heaters for which further investigation is necessary before a recommendation can be made. These process heaters are listed in table 4 of attachment 3. Various work group members volunteered to examine the heater categories in table 4. One industry representative stated that it may be difficult to make determinations for process heaters in industries, such as primary and secondary metals, that are not represented on the work group.

The group also identified several combustion devices with ambiguous descriptions that include both "process heater" and "incinerator" or "process heater" and "steam generator". The group agreed that these devices should be addressed by another

ICCR source work group. These combustion devices are listed in table 5 of attachment 3.

4.6 Process Heater De Minimis

An industry representative provided a packet of information developed by the De Minimis Subgroup which is included as attachment 4. The industry representative stated that the group found that 80 percent of process heater emissions are created by 50 percent of process heaters. The industry representative also provided that petroleum refineries account for 60 percent of industrial fuels consumed and glass, primary metals, and chemical manufacturing account for a combined 30 percent of industrial fuel consumed. The industry representative added that glass and primary metals manufacturing are not likely to use indirect-fired process heaters. Another industry representative estimated that petroleum refining, chemical manufacturing and pulp and paper manufacturing facilities contain 90 percent of process heaters. An industry representative agreed and stated that it is not necessary to survey facilities to demonstrate the suggested distribution.

One industry representative asked if there is a correlation between the size of a process heater and whether it is directly or indirectly-fired. The representative also asked if there is a correlation between process heater size and fuel combusted. An industry representative stated that oil is a small percentage of the fuel consumed. Another industry representative stated that there are many small oil-fired process heaters. An EPA representative provided that a survey on industrial gas usage provides a breakdown of fuel usage by SIC.

One industry representative asked if the subgroup discovered anything regarding the distribution of box and cylindrical

heaters and stated that, generally, cylindrical heaters are small. Another industry representative responded that, according to field data, emissions are not dependent on the shape of the heater. The industry representative added that most process heaters smaller than 100 MMBtu/hr are cylindrical.
One industry representative suggested that it may be possible for a cut-off to be develop for indirect-fired heaters based on fuel type instead of size.

The work group agreed not to make a recommendation regarding establishing a de minimis at this time.

## 5.0 Action Items

- Each industry group will review the ICCR database and determine the following for facilities within the SICs that they represent:
  > number of process heaters
  > fuel distribution
  > size distribution

- Each industry group will determine if the database provides a reasonable representation of actual process heaters and facilities. Industry groups will complete the database review by March 3.

- Bob Morris will provide data from the ICCR database for equipment categorized as "miscellaneous" to Bruno Ferraro, Lee Gilmer, Bill Maxwell and Roy Carwile for their review.

- Bill Maxwell will revise the table of SCCs and corresponding MACT efforts based on discussion by the group and e-mail the resulting tables to the group.

- Bill Maxwell will contact representatives of the grain industry and Roy Carwile will contact representatives of the secondary metals processing industry to offer them the opportunity to participate in or provide information for the ICCR.

- Minutes from the survey task group meeting on February 13 will be e-mailed to the work group.

- Bill Maxwell and Lee Gilmer will develop an agenda for the March 18 meeting.

## 6.0 NEXT MEETINGS

A conference call will take place on March 11 starting at 11:00 EST. Lee Gilmer and Bill Maxwell will coordinate and provide a call-in number.

The March 18 meeting in Chicago at the Intercontinental Hotel will begin at 8:30 a.m.

A meeting will be held April 22 in Research Triangle Park. The meeting will be coordinated by Bill Maxwell.

**These minutes represent an accurate description of matters discussed and conclusions reached and include a copy of all reports received, issued, or approved at the February 11, 1997, meeting of the Process Heater Work Group. Bill Maxwell, EPA.**

**Attachment 1**
**MEETING ATTENDEES**

Susan Blevins, Office of Air Quality, Texas Natural Resource Conservation Commission (TNRCC)
John Bloomer, Selas Corporation of America
John Cain, Chevron Research and Technology Company
Roy Carwile, Aluminum Company of America
Norbert Dee, National Petroleum Refiners Association
Chuck Feerick, Exxon Company, USA
Bruno Ferraro, Grove Scientific Company
Lee Gilmer, Texaco, Inc.
Greg Johnson, Shell Oil Company
Mary Lalley, Eastern Research Group
Bill Maxwell, EPA, Office of Air Quality Planning and Standards
Robert Morris, The Coastal Corporation
John Ogle, Dow Chemical Company
Lawrence Otwell, Georgia-Pacific Corporation
Janet Peargin, Chevron Corporation
Jim Seebold, Chevron Research and Technology Company
Karluss Thomas, Chemical Manufacturers Association

**Attachment 2**

**Table of SCCs and MACT Efforts Presented at the Meeting**

# Industrial Processes, Process Heaters

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30100108 | Chemical Manufacturing, Adipic Acid, Dryer | | 2869 | | 1 |
| 30100507 | Chemical Manufacturing, Carbon Black Production, Pellet Dryer | Carbon Black Production | 2895 | 10 year | 149 |
| 30100603 | Chemical Manufacturing, Charcoal Manufacturing, Batch Kiln | | 2861 | | 62 |
| 30100604 | Chemical Manufacturing, Charcoal Manufacturing, Continuous Kiln | | 2861 | | 7 |
| 30101202 | Chemical Manufacturing, Hydroflouric Acid, Rotary Kiln: Acid Reactor | Hydrogen Fluoride Production | 2819 | 10 year | 52 |
| 30102104 | Chemical Manufacturing, Sodium Carbonate, Monohydrate Process: Rotary Ore Calciner: Gas-fired | Photographic Chemicals Production | 2812 | 10 year | 1 |
| 30102106 | Chemical Manufacturing, Sodium Carbonate, Rotary Soda Ash Dryers | Photographic Chemicals Production | 2812 | 10 year | 4 |
| 30102822 | Chemical Manufacturing, Normal Superphosphates, Curing | Phosphate Fertilizers Production | 2874 | 10 year | 2 |
| 30102824 | Chemical Manufacturing, Normal Superphosphates, Dryer | Phosphate Fertilizers Production | 2874 | 10 year | 3 |
| 30102907 | Chemical Manufacturing, Triple Superphosphate, Granulator: Curing | Phosphate Fertilizers Production | 2874 | 10 year | 3 |
| 30102922 | Chemical Manufacturing, Triple Superphosphate, Curing | Phosphate Fertilizers Production | 2874 | 10 year | 2 |
| 30102924 | Chemical Manufacturing, Triple Superphosphate, Dryer | Phosphate Fertilizers Production | 2874 | 10 year | 3 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30103022 | Chemical Manufacturing, Ammonium Phosphates, Curing | Phosphate Fertilizers Production | 2874 | 10 year | 2 |
| 30103024 | Chemical Manufacturing, Ammonium Phosphates, Dryer | Phosphate Fertilizers Production | 2874 | 10 year | 7 |
| 30104201 | Chemical Manufacturing, Lead Alkyl Manufacturing (Sodium/Lead Alloy Process), Recovery Furnace | | 2869 | | 3 |
| 30111201 | Chemical Manufacturing, Elemental Phosphorous, Calciner | | 2819 | | 2 |
| 30111202 | Chemical Manufacturing, Elemental Phosphorous, Furnace | | 2819 | | 3 |
| 30112541 | Chemical Manufacturing, Chlorine Derivatives, Vinyl Chloride: Cracking Furnace | | 2869 | | 3 |
| 30113004 | Chemical Manufacturing, Ammonium Sulfate (Use 3-01-210 for Caprolactum Production), Caprolactum By-product: Rotary Dryer | Ammonium Sulfate Production - Caprolactum By-Product Plants | 2869 | 10 year | 11 |
| 30113005 | Chemical Manufacturing, Ammonium Sulfate (Use 3-01-210 for Caprolactum Production), Caprolactum By-product: Fluid Bed Dryer | Ammonium Sulfate Production - Caprolactum By-Product Plants | 2869 | 10 year | 3 |
| 30190001 | Chemical Manufacturing, Fuel Fired Equipment, Distillate Oil (No. 2): Distillate Heaters | ICCR | 2869 | | 20 |
| 30190002 | Chemical Manufacturing, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR | 2869 | | 21 |
| 30190003 | Chemical Manufacturing, Fuel Fired Equipment, Natural Gas: Distillate Heaters | ICCR | 2869 | | 773 |
| 30190004 | Chemical Manufacturing, Fuel Fired Equipment, Process Gas | ICCR | 2869 | | 71 |
| 30200504 | Food and Agriculture, Feed and Grain Country Elevators, Drying | | 5153 | | 444 |
| 30200522 | Food and Agriculture, Feed and Grain Country Elevators, Counter-flow Dryer | | 5153 | | 2 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30200604 | Food and Agriculture, Feed and Grain Country Elevators, Drying | | 4221 | | 2706 |
| 30200742 | Food and Agriculture, Grain Millings, Dry Corn Milling: Grain Drying | | 2041 | | 108 |
| 30200773 | Food and Agriculture, Grain Millings, Rice: Drying | | 2041 | | 56 |
| 30200784 | Food and Agriculture, Grain Millings, Soybean: Drying | | 2041 | | 123 |
| 30201206 | Food and Agriculture, Fish Processing, Direct Fired Dryer | | 2091 | | 9 |
| 30201601 | Food and Agriculture, Sugar Beet Processing, Pulp Dryer : Coal-fired | | 2063 | | 65 |
| 30203104 | Food and Agriculture, Export Grain Elevators, Drying | | 4221 | | 17 |
| 30203811 | Food and Agriculture, Animal/Poultry Rendering, Blood Dryer: Natural Gas Direct Fired | | 2077 | | 1 |
| 30290001 | Food and Agriculture, Fuel Fired Equipment, Distillate Oil (No. 2) | | 2077 | | 21 |
| 30290002 | Food and Agriculture, Fuel Fired Equipment, Residual Oil | | 2077 | | 29 |
| 30290003 | Food and Agriculture, Fuel Fired Equipment, Natural Gas | | 2077 | | 506 |
| 30290005 | Food and Agriculture, Fuel Fired Equipment, Process Heaters: LPG | | 2077 | | 4 |
| 30300002 | Primary Metal Production, Aluminum Ore (Bauxite), Drying Oven | Alumina Processing | 1051 | 10 year | 13 |
| 30300105 | Primary Metal Production, Aluminum Ore (Electro-reduction), Anode Baking Furnace | Primary Aluminum Production | 3334 | 7 year | 52 |
| 30300313 | Primary Metal Production, By-product Coke Manufacturing, Coal Preheater | | 3312 | | 22 |
| 30300506 | Primary Metal Production, Primary Copper Smelting, Ore Concentrate Dryer | Primary Copper Smelting | 3331 | 7 year | 8 |
| 30300522 | Primary Metal Production, Primary Copper Smelting, Slag Cleaning Furnace | Primary Copper Smelting | 3331 | 7 year | 2 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30300611 | Primary Metal Production, Ferroalloy, Open Furnace, Ore Dryer | | 3313 | | 3 |
| 30301403 | Primary Metal Production, Barium Ore Processing, Dryers/Calciners | | 3295 | | 123 |
| 30390001 | Primary Metal Production, Fuel Fired Equipment, Distillate Oil (No. 2): Process Heaters | ICCR | 3333 | 10 year | 20 |
| 30390002 | Primary Metal Production, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR | 3333 | 10 year | 14 |
| 30390003 | Primary Metal Production, Fuel Fired Equipment, Natural Gas: Process Heaters | ICCR | 3333 | 10 year | 365 |
| 30390004 | Primary Metal Production, Fuel Fired Equipment, Process Gas: Process Heaters | ICCR | 3333 | 10 year | 63 |
| 30400207 | Secondary Metal Production, Copper, Scrap Dryer (Rotary) | | 3362 | | 10 |
| 30400231 | Secondary Metal Production, Copper, Scrap Dryer | | 3362 | | 14 |
| 30400510 | Secondary Metal Production, Lead Battery Manufacture, Lead Reclaiming Furnace | Lead Acid Battery Manufacturing | 3691 | Deleted | 8 |
| 30400526 | Secondary Metal Production, Lead Battery Manufacture, Lead Reclaiming Furnace | Lead Acid Battery Manufacturing | 3691 | Deleted | 4 |
| 30400720 | Secondary Metal Production, Steel Foundries, Sand Dryer | Steel Foundries | 3324, 3325 | 10 year | 4 |
| 30400807 | Secondary Metal Production, Zinc, Concentrate Dryer | | 3341 | | 4 |
| 30400901 | Secondary Metal Production, Malleable Iron, Flux Furnace | | 3322 | | 3 |
| 30402004 | Secondary Metal Production, Furnace Electrode Manufacture, Bake Furnaces | | 3624 | | 36 |
| 30402201 | Secondary Metal Production, Metal Heat Treating, Furnace: General | | 3398 | | 440 |
| 30404901 | Secondary Metal Production, Miscellaneous Casting and Fabricating, Wax Burnout Oven | | 3300 | | 18 |
| 30404902 | Secondary Metal Production, Miscellaneous Casting and Fabricating, Wax Burnout Oven | | 3300 | | 1 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30490001 | Secondary Metal Production, Fuel Fired Equipment, Distillate Oil (No. 2): Process Heaters | ICCR | 3300 | 10 year | 11 |
| 30490002 | Secondary Metal Production, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR | 3300 | 10 year | 1 |
| 30490003 | Secondary Metal Production, Fuel Fired Equipment, Natural Gas | ICCR | 3300 | 10 year | 610 |
| 30490004 | Secondary Metal Production, Fuel Fired Equipment, Process Gas: Process Heaters | ICCR | 3300 | 10 year | 34 |
| 30490023 | Secondary Metal Production, Fuel Fired Equipment, Natural Gas | | 3300 | | 4 |
| 30490031 | Secondary Metal Production, Fuel Fired Equipment, Distillate Oil: Furnaces | | 3300 | | 5 |
| 30490033 | Secondary Metal Production, Fuel Fired Equipment, Natural Gas: Furnaces | | 3300 | | 355 |
| 30490034 | Secondary Metal Production, Fuel Fired Equipment, Process Gas: Furnaces | | 3300 | | 36 |
| 30490035 | Secondary Metal Production, Fuel Fired Equipment, Propane | | 3300 | | 1 |
| 30500201 | Mineral Products, Asphalt Concrete, Rotary Dryer: Conventional Plant | Asphalt Concrete Manufacturing | 2951 | 10 year | 1754 |
| 30500205 | Mineral Products, Asphalt Concrete, Drum Dryer: Hot Asphalt Plants | Asphalt Concrete Manufacturing | 2951 | 10 year | 1160 |
| 30500210 | Mineral Products, Asphalt Concrete, Asphalt Heater: Waste Oil | Asphalt Processing | 2951 | 10 year | 6 |
| 30500211 | Mineral Products, Asphalt Concrete, Rotary Dryer Conventional Plant with Cyclone | Asphalt Concrete Manufacturing | 2951 | 10 year | 53 |
| 30500301 | Mineral Products, Brick Manufacture, Raw Material Drying | Clay Products Manufacturing | 3251 | 10 year | 58 |
| 30500304 | Mineral Products, Brick Manufacture, Curing | Clay Products Manufacturing | 3251 | 10 year | 14 |
| 30500307 | Mineral Products, Brick Manufacture, Calcining | Clay Products Manufacturing | 3251 | 10 year | 6 |
| 30500310 | Mineral Products, Brick Manufacture, Curing and Firing: Sawdust Fired Tunnel Kilns | Clay Products Manufacturing | 3251 | 10 year | 15 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30500311 | Mineral Products, Brick Manufacture, Curing and Firing: Gas-fired Tunnel Kilns | Clay Products Manufacturing | 3251 | 10 year | 176 |
| 30500312 | Mineral Products, Brick Manufacture, Curing and Firing: Oil-fired Tunnel Kilns | Clay Products Manufacturing | 3251 | 10 year | 16 |
| 30500313 | Mineral Products, Brick Manufacture, Curing and Firing: Coal-fired Tunnel Kilns | Clay Products Manufacturing | 3251 | 10 year | 26 |
| 30500314 | Mineral Products, Brick Manufacture, Curing and Firing: Gas-fired Periodic Kilns | Clay Products Manufacturing | 3251 | 10 year | 126 |
| 30500316 | Mineral Products, Brick Manufacture, Curing and Firing: Coal-fired Periodic Kilns | Clay Products Manufacturing | 3251 | 10 year | 21 |
| 30500318 | Mineral Products, Brick Manufacture, Tunnel Kiln: Wood-fired | Clay Products Manufacturing | 3251 | 10 year | 1 |
| 30500402 | Mineral Products, Calcium Carbide, Coke Dryer | | 2819 | | 13 |
| 30500501 | Mineral Products, Castable Refractory, Raw Material Dryer | | 3255 | | 25 |
| 30500504 | Mineral Products, Castable Refractory, Curing Oven | | 3255 | | 58 |
| 30500606 | Mineral Products, Cement Manufacturing (Dry Process), Kilns | Portland Cement Manufacturing | 3241 | 7 year | 230 |
| 30500623 | Mineral Products, Cement Manufacturing (Dry Process), Preheater/Precalciner Kiln | Portland Cement Manufacturing | 3241 | 7 year | 2 |
| 30500706 | Mineral Products, Cement Manufacturing (Wet Process), Kilns | Portland Cement Manufacturing | 3241 | 7 year | 114 |
| 30500801 | Mineral Products, Ceramic Clay/Tile Manufacture, Drying | Clay Products Manufacturing | 3253 | 10 year | 188 |
| 30500915 | Mineral Products, Clay and Fly Ash Sintering, Rotary Kiln | | 3295 | | 13 |
| 30500916 | Mineral Products, Clay and Fly Ash Sintering, Dryer | | 3295 | | 9 |
| 30501201 | Mineral Products, Fiberglass Manufacturing, Regenerative Furnace (Wool-type Fiber) | Wool Fiberglass Manufacturing | 3229 | 7 year | 15 |
| 30501202 | Mineral Products, Fiberglass Manufacturing, Recuperative Furnace (Wool-type Fiber) | Wool Fiberglass Manufacturing | 3229 | 7 year | 7 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30501205 | Mineral Products, Fiberglass Manufacturing, Curing Oven: Rotary Spun (Wool-type Fiber) | Wool Fiberglass Manufacturing | 3229 | 7 year | 93 |
| 30501207 | Mineral Products, Fiberglass Manufacturing, Unit Melter Furnace (Wool-type Fiber) | Wool Fiberglass Manufacturing | 3229 | 7 year | 10 |
| 30501211 | Mineral Products, Fiberglass Manufacturing, Regenerative Furnace (Textile-type Fiber) | | 3229 | | 1 |
| 30501212 | Mineral Products, Fiberglass Manufacturing, Recuperative Furnace (Textile-type Fiber) | | 3229 | | 41 |
| 30501213 | Mineral Products, Fiberglass Manufacturing, Unit Melter Furnace (Textile-type Fiber) | | 3229 | | 4 |
| 30501215 | Mineral Products, Fiberglass Manufacturing, Curing Oven (Textile-type Fiber) | | 3229 | | 49 |
| 30501311 | Mineral Products, Frit Manufacture, Rotary Dryer (usually not used with a continuous furnace) | | 2899 | | 2 |
| 30501401 | Mineral Products, Glass Manufacture, Furnace/General | | 3211 | | 29 |
| 30501402 | Mineral Products, Glass Manufacture, Container Glass: Melting Furnace | | 3221 | | 203 |
| 30501403 | Mineral Products, Glass Manufacture, Flat Glass: Melting Furnace | | 3211 | | 72 |
| 30501404 | Mineral Products, Glass Manufacture, Pressed and Blown Glass: Melting Furnace | | 3229 | | 66 |
| 30501414 | Mineral Products, Glass Manufacture, Ground Cullet Beading Furnace | | 3211 | | 13 |
| 30501501 | Mineral Products, Gypsum Manufacture, Rotary Ore Dryer | | 3275 | | 66 |
| 30501511 | Mineral Products, Gypsum Manufacture, Continuous Kettle: Calciner | | 3275 | | 80 |
| 30501512 | Mineral Products, Gypsum Manufacture, Flash Calciner | | 3275 | | 39 |
| 30501520 | Mineral Products, Gypsum Manufacture, Drying Kiln | | 3275 | | 50 |
| 30501603 | Mineral Products, Lime Manufacture, Calcining: Vertical Kiln | Lime Manufacturing | 3274 | 10 year | 89 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30501604 | Mineral Products, Lime Manufacture, Calcining: Rotary Kiln (See SCC Codes 3-05-016-18,-19,-20,-21, -22) | Lime Manufacturing | 3274 | 10 year | 197 |
| 30501605 | Mineral Products, Lime Manufacture, Calcining: Gas-fired Calcimatic Kiln | Lime Manufacturing | 3274 | 10 year | 16 |
| 30501606 | Mineral Products, Lime Manufacture, Fluidized Bed Kiln | Lime Manufacturing | 3274 | 10 year | 13 |
| 30501617 | Mineral Products, Lime Manufacture, Multiple Hearth Calciner | Lime Manufacturing | 3274 | 10 year | 14 |
| 30501619 | Mineral Products, Lime Manufacture, Calcining: Gas-fired Rotary Kiln | Lime Manufacturing | 3274 | 10 year | 1 |
| 30501702 | Mineral Products, Mineral Wool, Reverberatory Furnace | Mineral Wool Production | 3296 | 7 year | 1 |
| 30501704 | Mineral Products, Mineral Wool, Curing Oven | Mineral Wool Production | 3296 | 7 year | 18 |
| 30501801 | Mineral Products, Perlite Manufacturing, Vertical Furnace | | 3295 | | 34 |
| 30501901 | Mineral Products, Phosphate Rock, Drying | | 1475 | | 42 |
| 30501905 | Mineral Products, Phosphate Rock, Calcining | | 1475 | | 21 |
| 30501906 | Mineral Products, Phosphate Rock, Rotary Dryer | | 1475 | | 2 |
| 30502102 | Mineral Products, Salt Mining, Granulation: Stack Dryer | | 1476 | | 19 |
| 30502720 | Mineral Products, Industrial Sand and Gravel, Sand Drying: Gas- or Oil-fired Rotary or Fluidized Bed Dryer | | 1442 | | 2 |
| 30503202 | Mineral Products, Asbestos Milling, Drying | | 1499 | | 1 |
| 30503402 | Mineral Products, Feldspar, Dryer | | 1499 | | 2 |
| 30504033 | Mineral Products, Mining and Quarrying of Nonmetallic Minerals, Ore Dryer | | 1400 | | 41 |
| 30508909 | Mineral Products, Talc Processing, Natural Gas Fired Crude Ore Dryer | | | | 1 |
| 30508955 | Mineral Products, Talc Processing, Pellet Dryer | | | | 3 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30590001 | Mineral Products, Fuel Fired Equipment, Distillate Oil (No. 2): Process Heaters | ICCR | 4463 | 10 year | 78 |
| 30590002 | Mineral Products, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR | 4463 | 10 year | 15 |
| 30590003 | Mineral Products, Fuel Fired Equipment, Natural Gas: Process Heaters | ICCR | 4463 | 10 year | 278 |
| 30600101 | Petroleum Industry, Process Heaters, Oil-fired | ICCR | 2911 | 10 year | 9 |
| 30600102 | Petroleum Industry, Process Heaters, Gas-fired | ICCR | 2911 | 10 year | 56 |
| 30600103 | Petroleum Industry, Process Heaters, Oil-fired | ICCR | 2911 | 10 year | 470 |
| 30600104 | Petroleum Industry, Process Heaters, Gas-fired | ICCR | 2911 | 10 year | 3198 |
| 30600105 | Petroleum Industry, Process Heaters, Natural Gas-fired | ICCR | 2911 | 10 year | 483 |
| 30600106 | Petroleum Industry, Process Heaters, Process Gas-fired | ICCR | 2911 | 10 year | 798 |
| 30600107 | Petroleum Industry, Process Heaters, LPG-fired | ICCR | 2911 | 10 year | 12 |
| 30600108 | Petroleum Industry, Process Heaters, Landfill Gas-fired | ICCR | 2911 | 10 year | 4 |
| 30600111 | Petroleum Industry, Process Heaters, Oil-fired (No. 6 Oil) > 100 Million Btu Capacity | ICCR | 2911 | 10 year | 37 |
| 30600199 | Petroleum Industry, Process Heaters, Other Not Classified | ICCR | 2911 | 10 year | 18 |
| 30600301 | Petroleum Industry, Catalytic Cracking Units, Thermal Catalytic Cracking Unit | | 2911 | | 62 |
| 30700104 | Pulp and Paper and Wood Products, Sulfate (Kraft) Pulping, Recovery Furnace/Direct Contact Evaporator | Pulp and Paper Production | 2611, 2621, 2631 | 7 year | 250 |
| 30700106 | Pulp and Paper and Wood Products, Sulfate (Kraft) Pulping, Lime Kiln | Pulp and Paper Production | 2611, 2621, 2631 | 7 year | 209 |
| 30700703 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Particleboard Drying | Plywood/Particle Board Manufacturing | 2435 | 10 year | 214 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30700704 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Waferboard Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 72 |
| 30700705 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Hardboard: Coe Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 21 |
| 30700706 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Hardboard: Predryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 21 |
| 30700709 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Hardboard: Bake Oven | Plywood/Particle Board Manufacturing | 2435 | 10 year | 28 |
| 30700712 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Fir: Sapwood: Gas-fired Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 8 |
| 30700713 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Fir: Heartwood Plywood Veneer Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 14 |
| 30700714 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Larch Plywood Veneer Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 3 |
| 30700715 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Southern Pine Plywood Veneer Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 92 |
| 30700716 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Poplar Wood Fired Veneer Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 99 |
| 30700717 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Gas Veneer Dryer: Pines | Plywood/Particle Board Manufacturing | 2435 | 10 year | 2 |
| 30790001 | Pulp and Paper and Wood Products, Fuel Fired Equipment, Distillate Oil (No. 2): Process Heaters | ICCR | 2430 | 10 year | 12 |
| 30790002 | Pulp and Paper and Wood Products, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR | 2430 | 10 year | 9 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30790003 | Pulp and Paper and Wood Products, Fuel Fired Equipment, Natural Gas: Process Heaters | ICCR | 2430 | 10 year | 169 |
| 30790021 | Pulp and Paper and Wood Products, Fuel Fired Equipment, Distillate Oil (No. 2) | | 2430 | | 1 |
| 30800705 | Rubber and Miscellaneous Plastics Products, Fiberglass Resin Products, Wax Burnout Oven | | 3079 | | 19 |
| 30890001 | Rubber and Miscellaneous Plastics Products, Process Heaters, Distillate Oil (No. 2) | ICCR | 3079 | 10 year | 1 |
| 30890003 | Rubber and Miscellaneous Plastics Products, Process Heaters, Natural Gas | ICCR | 3079 | 10 year | 169 |
| 30890004 | Rubber and Miscellaneous Plastics Products, Process Heaters, Liquified Petroleum Gas (LPG) | ICCR | 3079 | 10 year | 1 |
| 30890013 | Rubber and Miscellaneous Plastics Products, Process Heaters, Natural Gas: Incinerators | ICCR (incinerators) | 3079 | 10 year | 17 |
| 30902501 | Fabricated Metal Products, Drum Cleaning/Reclamation, Drum Burning Furnace | | 5085 | | 60 |
| 30990001 | Fabricated Metal Products, Fuel Fired Equipment, Distillate Oil (No. 2): Process Heaters | ICCR | 3431 | 10 year | 10 |
| 30990002 | Fabricated Metal Products, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR | 3431 | 10 year | 5 |
| 30990003 | Fabricated Metal Products, Fuel Fired Equipment, Natural Gas: Process Heaters | ICCR | 3431 | 10 year | 483 |
| 31000401 | Oil and Gas Production, Process Heaters, Distillate Oil (No. 2) | ICCR | 1311 | 10 year | 8 |
| 31000402 | Oil and Gas Production, Process Heaters, Residual Oil | ICCR | 1311 | 10 year | 5 |
| 31000403 | Oil and Gas Production, Process Heaters, Crude Oil | ICCR | 1311 | 10 year | 64 |
| 31000404 | Oil and Gas Production, Process Heaters, Natural Gas | ICCR | 1311 | 10 year | 1774 |
| 31000405 | Oil and Gas Production, Process Heaters, Process Gas | ICCR | 1311 | 10 year | 48 |
| 31000406 | Oil and Gas Production, Process Heaters, Propane/Butane | ICCR | 1311 | 10 year | 4 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 31000411 | Oil and Gas Production, Process Heaters, Distillate Oil (No. 2): Steam Generators | ICCR (boilers) | 1311 | 10 year | 4 |
| 31000414 | Oil and Gas Production, Process Heaters, Natural Gas: Steam Generators | ICCR (boilers) | 1311 | 10 year | 122 |
| 31000415 | Oil and Gas Production, Process Heaters, Process Gas: Steam Generators | ICCR (boilers) | 1311 | 10 year | 41 |
| 31390001 | Electrical Equipment, Process Heaters, Distillate Oil (No. 2) | ICCR | 7694 | 10 year | 2 |
| 31390003 | Electrical Equipment, Process Heaters, Natural Gas | ICCR | 7694 | 10 year | 38 |
| 39900601 | Miscellaneous Manufacturing Industries, Process Heater/Furnace, Natural Gas | ICCR | 39 | 10 year | 35 |
| 39990001 | Miscellaneous Manufacturing Industries, Distillate Oil (No. 2): Process Heaters | ICCR | 39 | 10 year | 26 |
| 39990002 | Miscellaneous Manufacturing Industries, Residual Oil: Process Heaters | ICCR | 39 | 10 year | 20 |
| 39990003 | Miscellaneous Manufacturing Industries, Natural Gas: Process Heaters | ICCR | 39 | 10 year | 1318 |
| 39990004 | Miscellaneous Manufacturing Industries, Process Gas: Process Heaters | ICCR | 39 | 10 year | 7 |
| 39990022 | Miscellaneous Manufacturing Industries, Residual Oil | | 39 | | 1 |

**Attachment 3**
**SCC Tables Developed to Reflect Meeting Discussion**

# Table 1. Process Heaters Recommended to Remain in ICCR

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30190001 | Chemical Manufacturing, Fuel Fired Equipment, Distillate Oil (No. 2): Distillate Heaters | ICCR | 2869 | 10 year | 20 |
| 30190002 | Chemical Manufacturing, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR | 2869 | 10 year | 21 |
| 30190003 | Chemical Manufacturing, Fuel Fired Equipment, Natural Gas: Distillate Heaters | ICCR | 2869 | 10 year | 773 |
| 30190004 | Chemical Manufacturing, Fuel Fired Equipment, Process Gas | ICCR | 2869 | 10 year | 71 |
| | Ethylene Cracking Units | Ethylene | 2869 | | |
| 30290001 | Food and Agriculture, Fuel Fired Equipment, Distillate Oil (No. 2) | ICCR * | 2077 | 10 year | 21 |
| 30290002 | Food and Agriculture, Fuel Fired Equipment, Residual Oil | ICCR * | 2077 | 10 year | 29 |
| 30290003 | Food and Agriculture, Fuel Fired Equipment, Natural Gas | ICCR * | 2077 | 10 year | 506 |
| 30290005 | Food and Agriculture, Fuel Fired Equipment, Process Heaters: LPG | ICCR * | 2077 | 10 year | 4 |
| 30390001 | Primary Metal Production, Fuel Fired Equipment, Distillate Oil (No. 2): Process Heaters | ICCR * | 3333 | 10 year | 20 |
| 30390002 | Primary Metal Production, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR * | 3333 | 10 year | 14 |
| 30390003 | Primary Metal Production, Fuel Fired Equipment, Natural Gas: Process Heaters | ICCR * | 3333 | 10 year | 365 |
| 30390004 | Primary Metal Production, Fuel Fired Equipment, Process Gas: Process Heaters | ICCR * | 3333 | 10 year | 63 |
| 30490001 | Secondary Metal Production, Fuel Fired Equipment, Distillate Oil (No. 2): Process Heaters | ICCR * | 3300 | 10 year | 11 |
| 30490002 | Secondary Metal Production, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR * | 3300 | 10 year | 1 |
| 30490003 | Secondary Metal Production, Fuel Fired Equipment, Natural Gas | ICCR * | 3300 | 10 year | 610 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30490004 | Secondary Metal Production, Fuel Fired Equipment, Process Gas: Process Heaters | ICCR * | 3300 | 10 year | 34 |
| 30590001 | Mineral Products, Fuel Fired Equipment, Distillate Oil (No. 2): Process Heaters | ICCR * | 4463 | 10 year | 78 |
| 30590002 | Mineral Products, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR * | 4463 | 10 year | 15 |
| 30590003 | Mineral Products, Fuel Fired Equipment, Natural Gas: Process Heaters | ICCR * | 4463 | 10 year | 278 |
| 30600101 | Petroleum Industry, Process Heaters, Oil-fired | ICCR | 2911 | 10 year | 9 |
| 30600102 | Petroleum Industry, Process Heaters, Gas-fired | ICCR | 2911 | 10 year | 56 |
| 30600103 | Petroleum Industry, Process Heaters, Oil-fired | ICCR | 2911 | 10 year | 470 |
| 30600104 | Petroleum Industry, Process Heaters, Gas-fired | ICCR | 2911 | 10 year | 3198 |
| 30600105 | Petroleum Industry, Process Heaters, Natural Gas-fired | ICCR | 2911 | 10 year | 483 |
| 30600106 | Petroleum Industry, Process Heaters, Process Gas-fired | ICCR | 2911 | 10 year | 798 |
| 30600107 | Petroleum Industry, Process Heaters, LPG-fired | ICCR | 2911 | 10 year | 12 |
| 30600108 | Petroleum Industry, Process Heaters, Landfill Gas-fired | ICCR | 2911 | 10 year | 4 |
| 30600111 | Petroleum Industry, Process Heaters, Oil-fired (No. 6 Oil) > 100 Million Btu Capacity | ICCR | 2911 | 10 year | 37 |
| 30600199 | Petroleum Industry, Process Heaters, Other Not Classified | ICCR | 2911 | 10 year | 18 |
| 30790001 | Pulp and Paper and Wood Products, Fuel Fired Equipment, Distillate Oil (No. 2): Process Heaters | ICCR * | 2430 | 10 year | 12 |
| 30790002 | Pulp and Paper and Wood Products, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR * | 2430 | 10 year | 9 |
| 30790003 | Pulp and Paper and Wood Products, Fuel Fired Equipment, Natural Gas: Process Heaters | ICCR * | 2430 | 10 year | 169 |
| 30890001 | Rubber and Miscellaneous Plastics Products, Process Heaters, Distillate Oil (No. 2) | ICCR | 3079 | 10 year | 1 |
| 30890003 | Rubber and Miscellaneous Plastics Products, Process Heaters, Natural Gas | ICCR | 3079 | 10 year | 169 |

Table 1. Process Heaters Recommended to Remain in ICCR (continued) **DRAFT**

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30890004 | Rubber and Miscellaneous Plastics Products, Process Heaters, Liquified Petroleum Gas (LPG) | ICCR | 3079 | 10 year | 1 |
| 30990001 | Fabricated Metal Products, Fuel Fired Equipment, Distillate Oil (No. 2): Process Heaters | ICCR * | 3431 | 10 year | 10 |
| 30990002 | Fabricated Metal Products, Fuel Fired Equipment, Residual Oil: Process Heaters | ICCR * | 3431 | 10 year | 5 |
| 30990003 | Fabricated Metal Products, Fuel Fired Equipment, Natural Gas: Process Heaters | ICCR * | 3431 | 10 year | 483 |
| 31000401 | Oil and Gas Production, Process Heaters, Distillate Oil (No. 2) | ICCR | 1311 | 10 year | 8 |
| 31000402 | Oil and Gas Production, Process Heaters, Residual Oil | ICCR | 1311 | 10 year | 5 |
| 31000403 | Oil and Gas Production, Process Heaters, Crude Oil | ICCR | 1311 | 10 year | 64 |
| 31000404 | Oil and Gas Production, Process Heaters, Natural Gas | ICCR | 1311 | 10 year | 1774 |
| 31000405 | Oil and Gas Production, Process Heaters, Process Gas | ICCR | 1311 | 10 year | 48 |
| 31000406 | Oil and Gas Production, Process Heaters, Propane/Butane | ICCR | 1311 | 10 year | 4 |
| 31390001 | Electrical Equipment, Process Heaters, Distillate Oil (No. 2) | ICCR * | 7694 | 10 year | 2 |
| 31390003 | Electrical Equipment, Process Heaters, Natural Gas | ICCR * | 7694 | 10 year | 38 |
| 39900601 | Miscellaneous Manufacturing Industries, Process Heater/Furnace, Natural Gas | ICCR * | 39 | 10 year | 35 |
| 39990001 | Miscellaneous Manufacturing Industries, Distillate Oil (No. 2): Process Heaters | ICCR * | 39 | 10 year | 26 |
| 39990002 | Miscellaneous Manufacturing Industries, Residual Oil: Process Heaters | ICCR * | 39 | 10 year | 20 |
| 39990003 | Miscellaneous Manufacturing Industries, Natural Gas: Process Heaters | ICCR * | 39 | 10 year | 1318 |
| 39990004 | Miscellaneous Manufacturing Industries, Process Gas: Process Heaters | ICCR * | 39 | 10 year | 7 |
| | Total count | | | | 11342 |

*Further investigation necessary to determine whether all in count are indirect-fired process heaters or

direct-fired units (e.g., dryers, kilns, etc.)

Table 2. Recommended Process Heaters for Coverage under Another MACT Standard

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30100507 | Chemical Manufacturing, Carbon Black Production, Pellet Dryer | Carbon Black Production | 2895 | 10 year | 149 |
| 30101202 | Chemical Manufacturing, Hydroflouric Acid, Rotary Kiln: Acid Reactor | Hydrogen Fluoride Production | 2819 | 10 year | 52 |
| 30102104 | Chemical Manufacturing, Sodium Carbonate, Monohydrate Process: Rotary Ore Calciner: Gas-fired | Photographic Chemicals Production | 2812 | 10 year | 1 |
| 30102106 | Chemical Manufacturing, Sodium Carbonate, Rotary Soda Ash Dryers | Photographic Chemicals Production | 2812 | 10 year | 4 |
| 30102822 | Chemical Manufacturing, Normal Superphosphates, Curing | Phosphate Fertilizers Production | 2874 | 10 year | 2 |
| 30102824 | Chemical Manufacturing, Normal Superphosphates, Dryer | Phosphate Fertilizers Production | 2874 | 10 year | 3 |
| 30102907 | Chemical Manufacturing, Triple Superphosphate, Granulator: Curing | Phosphate Fertilizers Production | 2874 | 10 year | 3 |
| 30102922 | Chemical Manufacturing, Triple Superphosphate, Curing | Phosphate Fertilizers Production | 2874 | 10 year | 2 |
| 30102924 | Chemical Manufacturing, Triple Superphosphate, Dryer | Phosphate Fertilizers Production | 2874 | 10 year | 3 |
| 30103022 | Chemical Manufacturing, Ammonium Phosphates, Curing | Phosphate Fertilizers Production | 2874 | 10 year | 2 |
| 30103024 | Chemical Manufacturing, Ammonium Phosphates, Dryer | Phosphate Fertilizers Production | 2874 | 10 year | 7 |

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30113004 | Chemical Manufacturing, Ammonium Sulfate (Use 3-01-210 for Caprolactum Production), Caprolactum By-product: Rotary Dryer | Ammonium Sulfate Production - Caprolactum By-Product Plants | 2869 | 10 year | 11 |
| 30113005 | Chemical Manufacturing, Ammonium Sulfate (Use 3-01-210 for Caprolactum Production), Caprolactum By-product: Fluid Bed Dryer | Ammonium Sulfate Production - Caprolactum By-Product Plants | 2869 | 10 year | 3 |
| 30300002 | Primary Metal Production, Aluminum Ore (Bauxite), Drying Oven | Alumina Processing | 1051 | 10 year | 13 |
| 30300105 | Primary Metal Production, Aluminum Ore (Electro-reduction), Anode Baking Furnace | Primary Aluminum Production | 3334 | 7 year | 52 |
| 30300506 | Primary Metal Production, Primary Copper Smelting, Ore Concentrate Dryer | Primary Copper Smelting | 3331 | 7 year | 8 |
| 30300522 | Primary Metal Production, Primary Copper Smelting, Slag Cleaning Furnace | Primary Copper Smelting | 3331 | 7 year | 2 |
| 30300611 | Primary Metal Production, Ferroalloy, Open Furnace, Ore Dryer | Ferroalloys Production | 3313 | 7 year | 3 |
| 30400510 | Secondary Metal Production, Lead Battery Manufacture, Lead Reclaiming Furnace | Lead Acid Battery Manufacturing | 3691 | Deleted | 8 |
| 30400526 | Secondary Metal Production, Lead Battery Manufacture, Lead Reclaiming Furnace | Lead Acid Battery Manufacturing | 3691 | Deleted | 4 |
| 30400720 | Secondary Metal Production, Steel Foundries, Sand Dryer | Steel Foundries | 3324, 3325 | 10 year | 4 |
| 30500201 | Mineral Products, Asphalt Concrete, Rotary Dryer: Conventional Plant | Asphalt Concrete Manufacturing | 2951 | 10 year | 1754 |
| 30500205 | Mineral Products, Asphalt Concrete, Drum Dryer: Hot Asphalt Plants | Asphalt Concrete Manufacturing | 2951 | 10 year | 1160 |
| 30500210 | Mineral Products, Asphalt Concrete, Asphalt Heater: Waste Oil | Asphalt Processing | 2951 | 10 year | 6 |
| 30500211 | Mineral Products, Asphalt Concrete, Rotary Dryer Conventional Plant with Cyclone | Asphalt Concrete Manufacturing | 2951 | 10 year | 53 |
| 30500301 | Mineral Products, Brick Manufacture, Raw Material Drying | Clay Products Manufacturing | 3251 | 10 year | 58 |

Table 2. Recommended Process Heaters for Coverage under Another MACT Standard (continued)

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30500304 | Mineral Products, Brick Manufacture, Curing | Clay Products Manufacturing | 3251 | 10 year | 14 |
| 30500307 | Mineral Products, Brick Manufacture, Calcining | Clay Products Manufacturing | 3251 | 10 year | 6 |
| 30500310 | Mineral Products, Brick Manufacture, Curing and Firing: Sawdust Fired Tunnel Kilns | Clay Products Manufacturing | 3251 | 10 year | 15 |
| 30500311 | Mineral Products, Brick Manufacture, Curing and Firing: Gas-fired Tunnel Kilns | Clay Products Manufacturing | 3251 | 10 year | 176 |
| 30500312 | Mineral Products, Brick Manufacture, Curing and Firing: Oil-fired Tunnel Kilns | Clay Products Manufacturing | 3251 | 10 year | 16 |
| 30500313 | Mineral Products, Brick Manufacture, Curing and Firing: Coal-fired Tunnel Kilns | Clay Products Manufacturing | 3251 | 10 year | 26 |
| 30500314 | Mineral Products, Brick Manufacture, Curing and Firing: Gas-fired Periodic Kilns | Clay Products Manufacturing | 3251 | 10 year | 126 |
| 30500316 | Mineral Products, Brick Manufacture, Curing and Firing: Coal-fired Periodic Kilns | Clay Products Manufacturing | 3251 | 10 year | 21 |
| 30500318 | Mineral Products, Brick Manufacture, Tunnel Kiln: Wood-fired | Clay Products Manufacturing | 3251 | 10 year | 1 |
| 30500606 | Mineral Products, Cement Manufacturing (Dry Process), Kilns | Portland Cement Manufacturing | 3241 | 7 year | 230 |
| 30500623 | Mineral Products, Cement Manufacturing (Dry Process), Preheater/Precalciner Kiln | Portland Cement Manufacturing | 3241 | 7 year | 2 |
| 30500706 | Mineral Products, Cement Manufacturing (Wet Process), Kilns | Portland Cement Manufacturing | 3241 | 7 year | 114 |
| 30500801 | Mineral Products, Ceramic Clay/Tile Manufacture, Drying | Clay Products Manufacturing | 3253 | 10 year | 188 |
| 30501201 | Mineral Products, Fiberglass Manufacturing, Regenerative Furnace (Wool-type Fiber) | Wool Fiberglass Manufacturing | 3229 | 7 year | 15 |
| 30501202 | Mineral Products, Fiberglass Manufacturing, Recuperative Furnace (Wool-type Fiber) | Wool Fiberglass Manufacturing | 3229 | 7 year | 7 |
| 30501205 | Mineral Products, Fiberglass Manufacturing, Curing Oven: Rotary Spun (Wool-type Fiber) | Wool Fiberglass Manufacturing | 3229 | 7 year | 93 |

Table 2. Recommended Process Heaters for Coverage under Another MACT Standard (continued)

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30501207 | Mineral Products, Fiberglass Manufacturing, Unit Melter Furnace (Wool-type Fiber) | Wool Fiberglass Manufacturing | 3229 | 7 year | 10 |
| 30501603 | Mineral Products, Lime Manufacture, Calcining: Vertical Kiln | Lime Manufacturing | 3274 | 10 year | 89 |
| 30501604 | Mineral Products, Lime Manufacture, Calcining: Rotary Kiln (See SCC Codes 3-05-016-18,-19,-20,-21, -22) | Lime Manufacturing | 3274 | 10 year | 197 |
| 30501605 | Mineral Products, Lime Manufacture, Calcining: Gas-fired Calcimatic Kiln | Lime Manufacturing | 3274 | 10 year | 16 |
| 30501606 | Mineral Products, Lime Manufacture, Fluidized Bed Kiln | Lime Manufacturing | 3274 | 10 year | 13 |
| 30501617 | Mineral Products, Lime Manufacture, Multiple Hearth Calciner | Lime Manufacturing | 3274 | 10 year | 14 |
| 30501619 | Mineral Products, Lime Manufacture, Calcining: Gas-fired Rotary Kiln | Lime Manufacturing | 3274 | 10 year | 1 |
| 30501702 | Mineral Products, Mineral Wool, Reverberatory Furnace | Mineral Wool Production | 3296 | 7 year | 1 |
| 30501704 | Mineral Products, Mineral Wool, Curing Oven | Mineral Wool Production | 3296 | 7 year | 18 |
| 30600301 | Petroleum Industry, Catalytic Cracking Units, Thermal Catalytic Cracking Unit | Refinery II | 2911 | | 62 |
| 30700104 | Pulp and Paper and Wood Products, Sulfate (Kraft) Pulping, Recovery Furnace/Direct Contact Evaporator | Pulp and Paper Production | 2611, 2621, 2631 | 7 year | 250 |
| 30700106 | Pulp and Paper and Wood Products, Sulfate (Kraft) Pulping, Lime Kiln | Pulp and Paper Production | 2611, 2621, 2631 | 7 year | 209 |
| 30700703 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Particleboard Drying | Plywood/Particle Board Manufacturing | 2435 | 10 year | 214 |
| 30700704 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Waferboard Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 72 |

Table 2. Recommended Process Heaters for Coverage under Another MACT Standard (continued)

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30700705 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Hardboard: Coe Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 21 |
| 30700706 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Hardboard: Predryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 21 |
| 30700709 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Hardboard: Bake Oven | Plywood/Particle Board Manufacturing | 2435 | 10 year | 28 |
| 30700712 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Fir: Sapwood: Gas-fired Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 8 |
| 30700713 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Fir: Heartwood Plywood Veneer Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 14 |
| 30700714 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Larch Plywood Veneer Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 3 |
| 30700715 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Southern Pine Plywood Veneer Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 92 |
| 30700716 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Poplar Wood Fired Veneer Dryer | Plywood/Particle Board Manufacturing | 2435 | 10 year | 99 |
| 30700717 | Pulp and Paper and Wood Products, Plywood/Particleboard Operations, Gas Veneer Dryer: Pines | Plywood/Particle Board Manufacturing | 2435 | 10 year | 2 |
| | Total count | | | | 5871 |

Table 3. "Process Heaters" Recommended for Regulation by Other Means but Having No Defined MACT

| SCC Code | Description | Basis | SIC Code(s) | Count |
|---|---|---|---|---|
| 30100603 | Chemical Manufacturing, Charcoal Manufacturing, Batch Kiln | Pyrolisis process; being investigated by Region VII for inclusion on source category list | 2861 | 62 |
| 30100604 | Chemical Manufacturing, Charcoal Manufacturing, Continuous Kiln | Same as above | 2861 | 7 |
| 30111201 | Chemical Manufacturing, Elemental Phosphorous, Calciner | Direct-fired process | 2819 | 2 |
| 30111202 | Chemical Manufacturing, Elemental Phosphorous, Furnace | Direct-fired process | 2819 | 3 |
| 30200504 | Food and Agriculture, Feed and Grain Country Elevators, Drying | Direct-fired process | 5153 | 444 |
| 30200522 | Food and Agriculture, Feed and Grain Country Elevators, Counter-flow Dryer | Direct-fired process | 5153 | 2 |
| 30200604 | Food and Agriculture, Feed and Grain Country Elevators, Drying | Direct-fired process | 4221 | 2706 |
| 30200742 | Food and Agriculture, Grain Millings, Dry Corn Milling: Grain Drying | Direct-fired process | 2041 | 108 |
| 30200773 | Food and Agriculture, Grain Millings, Rice: Drying | Direct-fired process | 2041 | 56 |
| 30200784 | Food and Agriculture, Grain Millings, Soybean: Drying | Direct-fired process | 2041 | 123 |

| SCC Code | Description | Basis | SIC Code(s) | Count |
|---|---|---|---|---|
| 30201206 | Food and Agriculture, Fish Processing, Direct Fired Dryer | Direct-fired process | 2091 | 9 |
| 30201601 | Food and Agriculture, Sugar Beet Processing, Pulp Dryer : Coal-fired | Direct-fired process | 2063 | 65 |
| 30203104 | Food and Agriculture, Export Grain Elevators, Drying | Direct-fired process | 4221 | 17 |
| 30203811 | Food and Agriculture, Animal/Poultry Rendering, Blood Dryer: Natural Gas Direct Fired | Direct-fired process | 2077 | 1 |
| 30300313 | Primary Metal Production, By-product Coke Manufacturing, Coal Preheater | Direct-fired process | 3312 | 22 |
| 30301403 | Primary Metal Production, Barium Ore Processing, Dryers/Calciners | Direct-fired process | 3295 | 123 |
| 30400207 | Secondary Metal Production, Copper, Scrap Dryer (Rotary) | Direct-fired process | 3362 | 10 |
| 30400231 | Secondary Metal Production, Copper, Scrap Dryer | Direct-fired process | 3362 | 14 |
| 30400807 | Secondary Metal Production, Zinc, Concentrate Dryer | Direct-fired process | 3341 | 4 |
| 30400901 | Secondary Metal Production, Malleable Iron, Flux Furnace | Direct-fired process | 3322 | 3 |
| 30402004 | Secondary Metal Production, Furnace Electrode Manufacture, Bake Furnaces | Direct-fired process | 3624 | 36 |
| 30402201 | Secondary Metal Production, Metal Heat Treating, Furnace: General | Direct-fired process | 3398 | 440 |

Table 3. "Process Heaters" Recommended for Regulation by Other Means but Having No Defined MACT (continued)

| SCC Code | Description | Basis | SIC Code(s) | Count |
|---|---|---|---|---|
| 30404901 | Secondary Metal Production, Miscellaneous Casting and Fabricating, Wax Burnout Oven | Direct-fired process | 3300 | 18 |
| 30404902 | Secondary Metal Production, Miscellaneous Casting and Fabricating, Wax Burnout Oven | Direct-fired process | 3300 | 1 |
| 30500402 | Mineral Products, Calcium Carbide, Coke Dryer | Direct-fired process | 2819 | 13 |
| 30500501 | Mineral Products, Castable Refractory, Raw Material Dryer | Direct-fired process | 3255 | 25 |
| 30500504 | Mineral Products, Castable Refractory, Curing Oven | Direct-fired process | 3255 | 58 |
| 30500915 | Mineral Products, Clay and Fly Ash Sintering, Rotary Kiln | Direct-fired process | 3295 | 13 |
| 30500916 | Mineral Products, Clay and Fly Ash Sintering, Dryer | Direct-fired process | 3295 | 9 |
| 30501211 | Mineral Products, Fiberglass Manufacturing, Regenerative Furnace (Textile-type Fiber) | Direct-fired process | 3229 | 1 |
| 30501212 | Mineral Products, Fiberglass Manufacturing, Recuperative Furnace (Textile-type Fiber) | Direct-fired process | 3229 | 41 |
| 30501213 | Mineral Products, Fiberglass Manufacturing, Unit Melter Furnace (Textile-type Fiber) | Direct-fired process | 3229 | 4 |

Table 3. "Process Heaters" Recommended for Regulation by Other Means but Having No Defined MACT (continued)

| SCC Code | Description | Basis | SIC Code(s) | Count |
|---|---|---|---|---|
| 30501215 | Mineral Products, Fiberglass Manufacturing, Curing Oven (Textile-type Fiber) | Direct-fired process | 3229 | 49 |
| 30501311 | Mineral Products, Frit Manufacture, Rotary Dryer (usually not used with a continuous furnace) | Direct-fired process | 2899 | 2 |
| 30501401 | Mineral Products, Glass Manufacture, Furnace/General | Direct-fired process | 3211 | 29 |
| 30501402 | Mineral Products, Glass Manufacture, Container Glass: Melting Furnace | Direct-fired process | 3221 | 203 |
| 30501403 | Mineral Products, Glass Manufacture, Flat Glass: Melting Furnace | Direct-fired process | 3211 | 72 |
| 30501404 | Mineral Products, Glass Manufacture, Pressed and Blown Glass: Melting Furnace | Direct-fired process | 3229 | 66 |
| 30501414 | Mineral Products, Glass Manufacture, Ground Cullet Beading Furnace | Direct-fired process | 3211 | 13 |
| 30501501 | Mineral Products, Gypsum Manufacture, Rotary Ore Dryer | Direct-fired process | 3275 | 66 |
| 30501511 | Mineral Products, Gypsum Manufacture, Continuous Kettle: Calciner | Direct-fired process | 3275 | 80 |

Table 3. "Process Heaters" Recommended for Regulation by Other Means but Having No Defined MACT (continued)

| SCC Code | Description | Basis | SIC Code(s) | Count |
|---|---|---|---|---|
| 30501512 | Mineral Products, Gypsum Manufacture, Flash Calciner | Direct-fired process | 3275 | 39 |
| 30501520 | Mineral Products, Gypsum Manufacture, Drying Kiln | Direct-fired process | 3275 | 50 |
| 30501801 | Mineral Products, Perlite Manufacturing, Vertical Furnace | Direct-fired process | 3295 | 34 |
| 30501901 | Mineral Products, Phosphate Rock, Drying | Direct-fired process | 1475 | 42 |
| 30501905 | Mineral Products, Phosphate Rock, Calcining | Direct-fired process | 1475 | 21 |
| 30501906 | Mineral Products, Phosphate Rock, Rotary Dryer | Direct-fired process | 1475 | 2 |
| 30502102 | Mineral Products, Salt Mining, Granulation: Stack Dryer | Direct-fired process | 1476 | 19 |
| 30502720 | Mineral Products, Industrial Sand and Gravel, Sand Drying: Gas- or Oil-fired Rotary or Fluidized Bed Dryer | Direct-fired process | 1442 | 2 |
| 30503202 | Mineral Products, Asbestos Milling, Drying | Direct-fired process | 1499 | 1 |
| 30503402 | Mineral Products, Feldspar, Dryer | Direct-fired process | 1499 | 2 |
| 30504033 | Mineral Products, Mining and Quarrying of Nonmetallic Minerals, Ore Dryer | Direct-fired process | 1400 | 41 |

Table 3. "Process Heaters" Recommended for Regulation by Other Means but Having No Defined MACT (continued)

| SCC Code | Description | Basis | SIC Code(s) | Count |
|---|---|---|---|---|
| 30508909 | Mineral Products, Talc Processing, Natural Gas Fired Crude Ore Dryer | Direct-fired process | | 1 |
| 30508955 | Mineral Products, Talc Processing, Pellet Dryer | Direct-fired process | | 3 |
| 30800705 | Rubber and Miscellaneous Plastics Products, Fiberglass Resin Products, Wax Burnout Oven | Direct-fired process | 3079 | 19 |
| 30902501 | Fabricated Metal Products, Drum Cleaning/Reclamation, Drum Burning Furnace | Direct-fired process | 5085 | 60 |
| | Total count | | | 5356 |

Table 4. "Process Heaters" Being Investigated for Inclusion in ICCR

| SCC Code | Description | MACT Project | SIC Code(s) | "Bin" | Count |
|---|---|---|---|---|---|
| 30100108 | Chemical Manufacturing, Adipic Acid, Dryer | | 2869 | | 1 |
| 30104201 | Chemical Manufacturing, Lead Alkyl Manufacturing (Sodium/Lead Alloy Process), Recovery Furnace | | 2869 | | 3 |
| 30112541 | Chemical Manufacturing, Chlorine Derivatives, Vinyl Chloride: Cracking Furnace | | 2869 | | 3 |
| 30490023 | Secondary Metal Production, Fuel Fired Equipment, Natural Gas | | 3300 | | 4 |
| 30490031 | Secondary Metal Production, Fuel Fired Equipment, Distillate Oil: Furnaces | | 3300 | | 5 |
| 30490033 | Secondary Metal Production, Fuel Fired Equipment, Natural Gas: Furnaces | | 3300 | | 355 |
| 30490034 | Secondary Metal Production, Fuel Fired Equipment, Process Gas: Furnaces | | 3300 | | 36 |
| 30490035 | Secondary Metal Production, Fuel Fired Equipment, Propane | | 3300 | | 1 |
| 30790021 | Pulp and Paper and Wood Products, Fuel Fired | | 2430 | | 1 |
| 39990022 | Miscellaneous Manufacturing Industries, Residual Oil | | 39 | | 1 |
| | Total count | | | | 410 |

Table 5. "Process Heaters" Recommended for Moving to Another ICCR Source Category

| SCC Code | Description | MACT Project | SIC | "Bin" | Count |
|---|---|---|---|---|---|
| 30890013 | Rubber and Miscellaneous Plastics Products, Process | ICCR | 3079 | 10 year | 17 |
| 31000411 | Oil and Gas Production, Process Heaters, Distillate | ICCR (boilers) | 1311 | 10 year | 4 |
| 31000414 | Oil and Gas Production, Process Heaters, Natural | ICCR (boilers) | 1311 | 10 year | 122 |
| 31000415 | Oil and Gas Production, Process Heaters, Process | ICCR (boilers) | 1311 | 10 year | 41 |
| | Total count | | | | 184 |

Attachment 4
De Minimis Subgroup Handout

*An electronic copy of this document is not available. A paper copy will be placed in the project docket.*